Amendments to the Claims

Amend claims 1 - 20 as follows:

1. (currently amended) A computerized simulation system for simulating an integrated circuit which comprises:

~~a computer system comprising an operating environment for computer applications;~~

a simulator module comprising <u>an</u> API <u>wherein said API comprises at least one function</u> ~~functions to~~ <u>and wherein said simulator module uses said function to define</u> ~~construct, simulate and get results from a simulated~~ <u>a first</u> circuit <u>wherein said function is recorded</u> ~~and function calls for engaging the computer system~~;

<u>a code module which comprises a compilation of a plurality of said recorded functions; and</u>

<u>an interface between said code module and</u> a user program ~~which executes on the~~ <u>a</u> computer system~~, and allows~~ <u>wherein</u> a user ~~to define~~ <u>defines said</u> code module inputs<u>, outputs, and load parameters</u> ~~and circuit outputs;~~<u>.</u>

~~a circuit code module linked to the simulator module comprising an interface to the user program, packaged function calls for the circuit which is simulated and an interface to the user program~~

2. (Canceled)

3. (Canceled)

4. (Currently amended) The system of claim 1<u>,</u> wherein a <u>circuit</u> ~~load description~~ parameter is <u>applied to said code module, wherein said parameter is</u> provided through ~~the~~ <u>said</u> user program by a static load model.

5. (Currently amended) The system of claim 1<u>,</u> wherein a <u>circuit</u> ~~load description~~ parameter is <u>applied to said code module, wherein said parameter is</u> provided through ~~the~~ <u>said</u> user program by a dynamic callback function.

6. (Canceled)

7. (Currently amended) The system of claim ~~6~~ <u>1,</u> wherein ~~the packaged function~~

~~calls are~~ <u>said code module is</u> compiled into ~~libraries~~ <u>a library</u>.

8. (Currently amended) The system of claim 7<u>,</u> wherein ~~the~~ <u>said</u> code module ~~also~~ <u>further</u> comprises a dynamically loadable library ~~containing~~ <u>having at least one</u> instantiation[[s]] of <u>said</u> ~~API simulator calls~~ <u>function</u>.

9. (Canceled)

10. (Currently amended) A method of <u>modeling and</u> ~~using a circuit simulator to model~~ <u>simulating</u> a circuit, comprising the steps of:

<u>providing a simulator module comprising an API having at least one function;</u>

<u>defining a first circuit by executing said functions;</u>

~~providing a record of calls made~~ <u>recording a plurality of said functions used by</u> said simulator module ~~to a circuit simulator during construction and setup of~~ <u>during said step of defining said first circuit</u> ~~circuits~~;

~~packaging the recorded calls~~ <u>compiling said recorded functions</u> ~~together into~~ <u>to</u> <u>create</u> a ~~circuit~~ code module; ~~and adding an interface which can be called by a user program~~;

<u>adding an interface to said code module which provides access to said code module from a user program;</u>

linking ~~the circuit~~ <u>said compiled</u> code module to [[the]] <u>a</u> circuit simulator ~~such that the user program can define inputs, outputs and loads for the circuit~~; and

<u>assigning inputs, outputs and load parameters to said code module by calling said code module through said interface.</u>

~~inputting through the user program the input, output and load of the circuit which is to be modeled~~.

11. (Canceled)

12. (Currently amended) The method of claim ~~11~~ <u>10,</u> ~~also~~ <u>further</u> comprising the step of compiling ~~the recorded~~ <u>said recorded functions</u> ~~calls and the code module~~

~~as~~ into a library.

13. (Currently amended) The method of claim 10, wherein said step of assigning said parameters to said code module ~~also~~ ~~comprising~~ comprises the step of providing a call-back function ~~prototype to determine the load of the circuit~~.

14. (Canceled)

15. (Canceled)

16. (Currently amended) A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for modeling and simulating a circuit ~~using a simulator to model an IC~~, the method steps comprising:

  providing a simulator module comprising an API having at least one function;

  defining a first circuit by executing said functions;

  ~~providing a record of calls made~~ recording a plurality of said functions used by said simulator module ~~to a circuit simulator during construction and setup of~~ during said step of defining said first circuit ~~circuits~~;

  ~~packaging the recorded~~ compiling said recorded functions ~~calls together into a circuit~~ to create a code module ~~and adding an interface which can be called by a user program~~;

  adding an interface to said code module which provides access to said code module from a user program;

  linking ~~the circuit~~ said compiled code module to [[the]] a circuit simulator ~~such that the user program can define inputs, outputs and loads for the circuit~~; and

  assigning inputs, outputs and load parameters to said code module by calling said circuit code module through said interface.~~; and~~

  ~~inputting through the user program the input, output and load of the circuit which is to be modeled.~~

17. (Canceled)

18. (Currently amended) The program storage device of claim ~~17~~ 16, wherein the method steps ~~also~~ further comprise the step of compiling ~~the~~ said recorded functions ~~stored calls and~~ ~~the~~ ~~code module as~~ into a library ~~module~~.

19. (currently amended) The program storage device of claim 16, wherein ~~the~~ ~~method steps also~~ said step of assigning said parameters to said code module ~~comprise the~~ comprises the step of providing a call-back function ~~prototype to~~ ~~determine the load of the circuit~~.

20. (Canceled)

21. (New) A behaviorally equivalent circuit for modeling and simulating an original circuit comprising:

    a first current source, wherein said first current source is dependent on a

    first input and a first output and is coupled to said first output;

    a first passive element coupled to said first input;

    a second passive element coupled to said first input and said first output;

    and

    a third passive element coupled to said first output.

22. (New) The circuit of claim 21, wherein an internal impedance block which

equates to an internal impedance of said original circuit, is coupled to said first

output.

23. (New) A methodology for modeling and simulating a circuit comprising:

    providing a table of element values;

providing an ODE;

providing an ODE solver, wherein said ODE solver comprises an input voltage, output loading, and element values; and

Solving said ODE, wherein the results comprise an output voltage.

24. (New) The methodology of claim 23, wherein said element values are dependent on said input voltage and said output voltage.

25. (New) The methodology of claim 23, wherein the method comprises an additional step of filtering said element values.

26. (New) the methodology of Claim 23, comprising an additional step of providing an interpolator coupled to said table of element values and said ODE solver, wherein said interpolator creates interpolated element values from said element values, said input voltage, and said output voltage.

27. (New) the methodology of Claim 23, wherein said table of element values comprises arguments to a function wherein said function output provides said element value.